THE HISTORIC URBAN FOOTPRINT: A CITY OF PROMENADES

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ABSTRACT

Studying old maps showing the transformation of Mexico City can unveil possible footprints and disappearance of historic facilities and utilities in the process of urban modernization. The objective of this exercise is to uncover the location of old structures of Pre-Hispanic, Colonial, Independent and Modern Mexico City as a basis for creating a new footprint of urban memory and identity through a park system.

A city of promenades proposes the remembrance and use of public space, such as the recuperation of lost cultural and geographic landscapes. It takes the routes and paths, the aqueducts, the roads, the moats, the ramparts, the gates of the historic city and its connections to other villages which now conform this great metropolitan area and it revives them in order to bring communities together. Inhabitants experience a sense of belonging to a meaningful place, while looking back to the past of a growing city.

These paths will serve as detonators of projects and actions which will improve patterns of use and sense of identity, offering landmarks, establishing linear parks as connectors of different scales of existing parks and, through modern design, creating a rediscovered footprint of monuments, landscapes and infrastructures long gone or forgotten, forming bridges between the old and central neighborhoods with the suburban ones, as well as a more amiable connection between different income levels.

A park system using the geographic and urban landscapes (including natural and artificial infrastructures) can be a path towards a more restorative urban form.

INTRODUCTION

The interest in developing a theory-practice on park systems stems from an idea captured in a book by French Forestry Engineer Jean Claude Nicolas Forestier published in 1908 and republished by the French Institute of Architecture (IFA) in 1997, in an attempt to recover the importance of green space in cities, and connecting parks by way of reforesting streets.

Our team has worked towards a theory of park systems, based on historic examples and the significance of urban parks shared by authors, professionals and users (Aguilar-Dubose, 2020). When parks are linked together, the benefits multiply manifold (García-Vedrenne, 2020). A park system:

a. Facilitates projects that strengthen neighborhood identity, fostering community through cultural activities;

b. Promotes social osmosis, favoring network flexibility, weaving urban values and binding populations of diverse income levels;

c. Restores natural ecological cycles and cultivates environmental resilience;

d. Beautifies the urban landscape;

e. Creates a formal recognizable organizing structure;

f. Offers a mobility alternative.

Cities have for centuries been endowed with green open space, public or private. However, the intent of these spaces has not always been a conscious mindset to produce a system. Cities have expanded with no explicit aim to form a park system, other than comply with a set of regulations specifying square feet of open space per inhabitant. On the other hand, cities with deliberate park systems have been considerably benefitted by this aspiration (Turner, 2005).

Any city has the potential of conforming a park system. This research attempts to put together a practical theory based on historical examples to come up with a strategy and tactical solutions to conform a park system. Our laboratory has been Mexico City, where one finds different topographical challenges, a diverse ensemble of income levels and a wide range of cultural preferences.

Analyzing urban form through the lens of a park system is a qualitative approach to planning and designing cities. We begin by looking into the historic examples and how urban form has been influenced by green open space.

HISTORIC EXAMPLES

Historic examples offer a perspective of intent, a legacy of technique and an accumulation of valuable experience (Aguilar-Dubose, García-Vedrenne, 2019), not least of which is the social, economic and political persuasion of an era, and how the concepts of nature and urban open space have changed from health, beauty, bountiful resources and modernity, to a penchant towards resilience, stewardship, community and equity (Aguilar-Dubose, 2020). Following is an assortment of different examples to show how these changes have impacted urban form.

CITY AS A PARK

Cities can be patterned as parks. In 1913, Edwin Lutyens created New Delhi, a garden city built in the 'grand manner' tradition of wide tree-lines boulevards connecting spacious roundabouts, where public space is central to impose imperial and social status (Kostoff, The City Shaped..., 1999). In 1926, José Luis Cuevas-Pietrasanta used the footprint of an obsolete racetrack and infield as protagonists of a design centered on a generous central park and boulevards to design Hipódromo Condesa neighborhood in Mexico City (Guitart, 2020). In 1945, Jorge de Macedo Vieira designed Maringá Garden City in Paraná, Brazil, by using the lucious vegetation to form parks linked by tree-lined avenues (Leao Rego, 2014). In 1964, Mexican architects Ramón Torres and Héctor Velázquez (Noelle, 2013) reinterpreted the garden city ethos in San Juan de Aragón in Mexico City, an affordable housing development surrounding a metropolitan park, and using wide avenues with linear park medians as borders between the different sections, whose collective facilities are distributed through central park-like compounds. These city patterns use a park design as the pivotal element of their urban form.

GREEN ORGANIZING STRUCTURE

This specific arrangement is a method of using parks to form identifiable focal points, significant origin and destination places, memorable nodes, landmarks and boundaries, and conforming an identifiable and legible framework. In 1598, Shah Abbas, transformed urban public space by connecting two large royal precincts with a monumental garden avenue and bridge to structure growth (McChesney, 1987). Between 1727 and 1781, John Wood and Son and John Palmer, were inspired by the London squares to promote housing schemes with parks as landmarks (Bacon, 1976) and probable sales pitches for the development of the resort town of Bath, England. In 1925, Ernst May and his team designed Römerstadt Garden City in Frankfurt, the German interpretation of Raymond Unwin's garden city principles, juxtaposing road and pedestrian trail networks (Panerai, et.al.). In 1951, Le Corbusier, Pierre Jeanneret, Maxwell Fry, Jane Drew, Aditya Prakash, designed the new capital city Chandigarh, in India, adopting a multinodal and poly-centered structure through the juxtaposition of a park system over a complex hierarchical road network (Boesiger, 1972). The organizing structure conveyed by parks is unique and offers a distinguishable and attractive urban landscape.

THE PARK AS A PLANNING STRATEGY

This is an approach whereby garden squares, tree-lined streets, parks and other open spaces are connected to promote new urban growth or restructure the existing urban form. In 1732, James Oglethorp designed the river port of Savannah, USA, an ingenious gridiron pattern of cellular units each with a central green square as a growth control tactic (Morris, 1994). In 1853, Napoleon III and Baron Haussmann began the restructuring of Paris, to endow the city with great vistas, focal points, new straight boulevards and rendering an industrial city more efficient, healthy, modern and beautiful (Jordan, 1995). In 1858, Emperor Franz Joseph I instructed the building of the Ringstrasse for Vienna, utilizing the vacant land from the demolished defensive walls, furnishing the city with modern facilities on a wide tree-lined boulevard, suturing the old and new neighborhoods (Morris, 1994). In1993. Moshe Safdie won the competition to build a new city in Israel, Modi'in, with a more organic approach to design, using hilly topography to juxtapose a street structure that follows the terrain and a stepped pedestrian network that culminates at a park and facilities at the bottom of the valley (Rybzcynski, 2010). These examples demonstrate the organizational potential of using parks.

CITIES WITH PARK SYSTEMS AS A DESIGN CONCEPT

Since the late 19th Century, different local stakeholders have fostered a park system to promote a competitive modern urban form for existing cities and new urban designs. In 1868, the Buffalo city authorities, requested Frederick Law Olmsted to design a park and he offered three parks connected by a web of parkways (Harnik, 2013). In 1883, Horace W.S. Cleveland prompted a land acquisition movement to build the Grand Rounds park system for Minnesota whereby a system of greenways enhances living environments. In 1889, Edward Manning Bigelow advocated for a park system for Pittsburgh, PA. (online article). In1902, Frederick Law Olmsted and Daniel Burnham contributed the park system for the Washington, D.C. McMillan Plan, integrating a suburban green ring of parks and parkways that included the location of the Civil War forts (online article). In 1925, Patrick Geddes proposed the Extension Plan for Tel Aviv, with treed boulevards, central medians and interior block gardens (online article). In 1938, Holger Blom began works for the linear park system along the shores of Lake Mälaren in Stockholm, Sweden, first park system in Europe (Turner, 2005). In 1950, Stuttgart in Germany used its royal parks and longtime flower exhibits to

form a park system (Turner, 2005). In 2008, the design team Duany-Plater Zyberk DPZ, designed the Master Plan for Kentlands, Gaithersburg, USA, containing a park system for a housing development (Kostoff, The City Assembled..., 1999) on the grounds of an old farmstead.

The following image [Figure 1] shows the different urban forms generated using parks as the catalyzing idea.

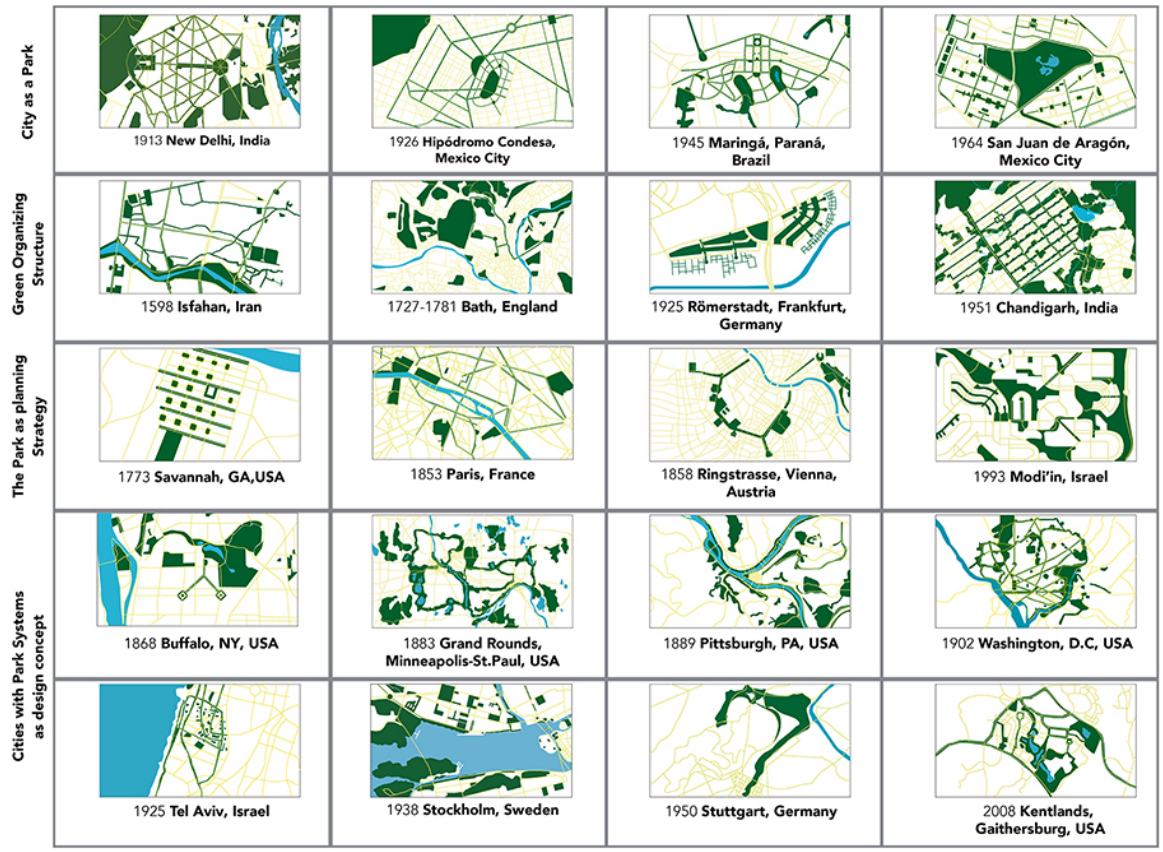

Figure 1. Historic urban forms seen through green space.

RESEARCH AND RESULTS: STRATEGY AND TACTICS

Our theory on park systems is based on the premise that the whole is more than the sum of its parts. Studying Mexico City's growth, and understanding it in terms of connectedness, relationships, flows, patterns and context, has given us the opportunity to approach this project in a holistic way. Observing the city through a systems lens has allowed us to map out a complex ensemble of interlinked elements, whereby we have come to the shared vision that a park system can only bring more resilience to the ongoing changes of the city.

We have also learned from historic examples that there are certain basic elements that are permanent in systems: the connectors, the articulators and the overall context, natural or man-made. Parks, as part of the elements of this system, can be interlinked by greenways, and the road network may lend itself to serve this function, whereas nodes and landmarks can act as articulators or hinges.

Trying to coalesce the historic urban footprint with existing parks, we have divided the landscapes into: geographic and urban. Geographic landscapes are natural features of the terrain, that serve as the identifying character of 'place', as well as an anchor to a meaningful, imageable and memorable cityscape.

Urban landscapes encompass the new and old built form, infrastructure, the pattern of public space in the city, buildings, road network and the utility lines and facilities that form the human urban habitat as a whole. We are proposing to consider the footprint of old infrastructures as well as the existing infrastructures as an integral part of the park system.

The elements of this park system, as we understand it, are:

Urban Landscape features:

1. Existing parks: different typologies, scales and locations (national parks, metropolitan parks, urban parks, neighborhood parks, pocket parks, green public squares);
2. Open space: cemeteries, vacant lots, obsolete industrial facilities;
3. Non-public landscape elements to be used as 'scenic' features: golf courses, private clubs, communal gardens, green spaces in large housing projects, conservation areas;
4. Connectors: avenues, primary streets, secondary streets, sidewalks, central medians;
5. Articulators or 'hinges': nodes (mass transit stops and stations, museums); landmarks (monuments, roundabouts, sculptures, towers, skyscrapers);
6. Old infrastructures: irrigation canals, ditches, channeled waterways, dikes, embankments, walls, customs gates and toll booths, historic trails to nearby towns and villages, old railways;
7. New infrastructures: power lines and viaduct rights of way, streets, sidewalks, boulevards and central medians.

Geographic Landscape features:

1. topography;
2. woodlands;
3. lakes, rivers, wetlands and seashores;
4. ravines and gullies;
5. hills, mountain ranges and volcanoes.

The old infrastructure will have the purpose of bringing back historic memory to endow the system with unique cultural, memorable and singular attributes. The new infrastructure will make a diversity of movement possible and act as the connectors and articulators of the system.

Before the arrival of the Spanish *'conquistadores'*, Prehispanic Mexico City was endowed with an urban form never before envisaged or influenced by Western European culture. It was an essentially 'open' city, an unorthodox combination between urban and rural (Gruzinski, 2004), integrating a complex network of cultivated plot homesteads, waterways and roads, neighborhoods dedicated to different trades, palaces, grand civic spaces and temples, forming an artificial archipelago in a lacustrine environment. There existed no 'parks' as such, but life for the most part ensued outdoors, for work, play, learning.

When the Spaniards arrived, the European idea of a city was branded on the Aztec ruins, in a conventional Vitruvian checkerboard design, along with Renaissance architecture where life could ensue mostly indoors. Growth was planned militarily at first, then by the decision-making process of the representative of the Spanish Crown throughout the Colonial Period. Lakes were eventually dried up, which opened up new territory for building, especially towards the green hilly West and the temperate South. The East was a flood risk. Engineering projects to drain the constantly flooded city did not help until the late 19th Century with the opening of a modern sewage system. Only until the last quarter of the 20th Century did Mexico City rely on serious planning regulations for its growth, becoming one of the largest metropolitan areas in the world. The matrix in Figure 2 shows the ongoing human modifications to the environment,

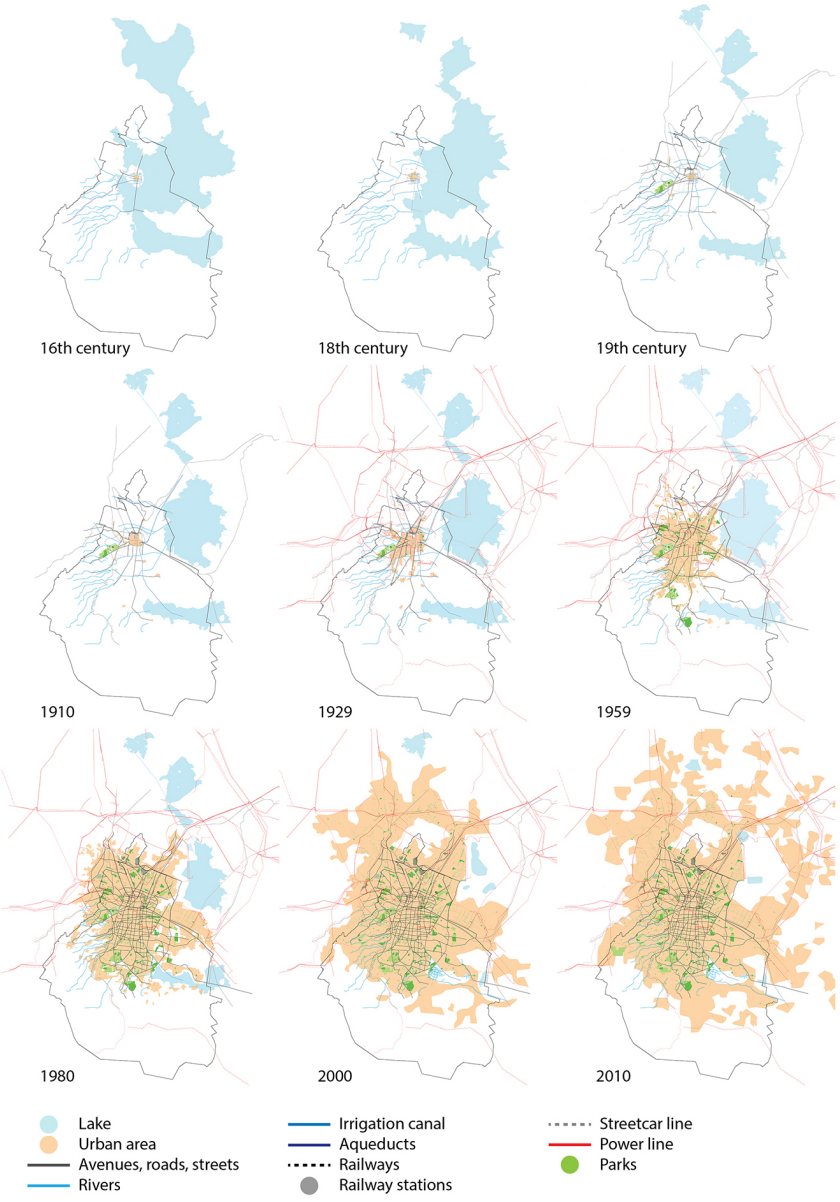

Figure 2. Historical footprint of geographic and urban infrastructures.

as Mexico City grew, demonstrating the ongoing contention between urban and geographic landscapes.

The city has a distinct monumental historic core, surrounded by a melting pot of very diverse income level neighborhoods. The East, the old lake bed is, by far, the poorest and the worst serviced with respect to water, drainage, sewage, flood risk and dust hazards. Parks are an integral part of a percentage of new formal development, but as much as 60% of the city has historically grown informally, outside government regulations (Castillo, online article). This leaves the lower income levels with few parks and recreational facilities. A park system is a means of democratizing public green open space, as well as a tool to heal the wounds of inequality between low and high-income neighborhoods.

This system offers to connect different income levels, and links the monumental historic center with the historic centers of the various satellite townships that surrounded the early stages of Mexico City, now a part of the megacity ensemble. [Figure 4].

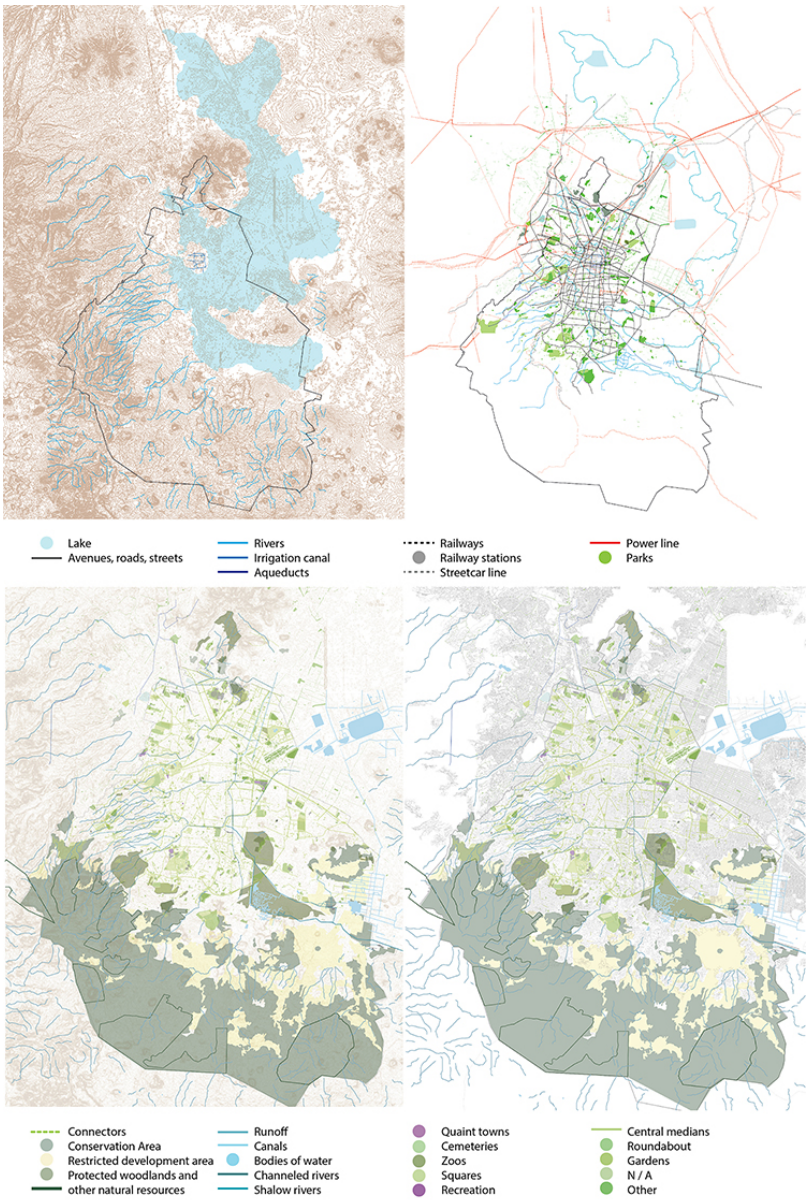

Figure 3. Typology of parks and landscape.

e layered the different income levels, information furnished by the National Institute for Geography and Statistics. We mapped out the different typology of parks and then connected them through viable road reforestation. Geographic landscape features were integrated into this process. [Figure 3].

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EPILOGUE

As we attempt to build a park system theory, we have gathered illuminating data from the common places in the observed examples. Park systems emerge through the idea of creating a green ring around the urban historic centers. These green systems also serve to link dense urban areas with suburban extensions, as well as connect diverse income level neighborhoods, offering equal access

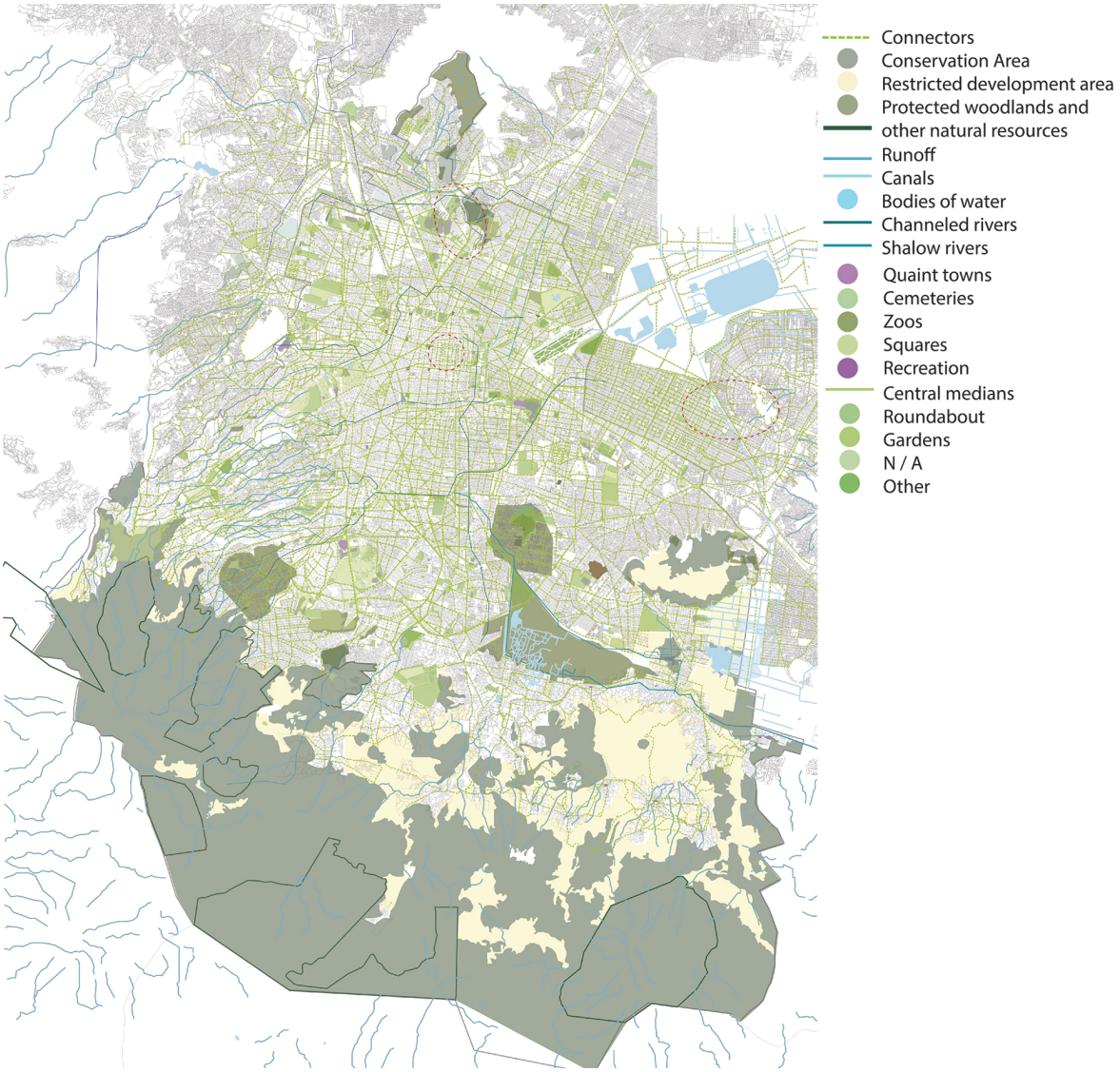

Figure 4. Park System for Mexico City.

to landscaping and recreation. This leverages the scenic potential of natural features such as rivers, lakes, seashores, woodlands, hills, mountain ranges, gullies, ravines.

Park systems connect and put to advantageous use available urban open space, in the form of formal small and large parks, as well as vacant lots and non-conventional open areas such as cemeteries, old railways, power lines, the ground under roadway bridges. By so doing, urban green helps to recuperate the importance of public space as a way to reconceptualize the city.

Park systems promote the re-enactment of cultural and religious rituals and ceremonies that can be integrated to the park itinerary, enriching the symbolic and memory content, as well as the educational and display potential of open spaces.

A park system may not be the only solution to the urban question. It does, however, offer benefits that go beyond the redistribution of public space and improving the efficiency of the existing urban form. Furthermore, it contributes resilience against greenhouse gas emissions, heat island effect and air pollution; it guarantees the replenishment of aquifers and the migration of pollinating species; it fortifies the diversity of ecosystems; and it offers a beautified landscape. More to the point of the problems cities face today, a park system can create a sense of community and build pride and understanding of place.

REFERENCES

Aguilar-Dubose, C. (2020). *El Parque Urbano: entre Naturaleza y Democracia*. Manuscript currently being designed for publication. Mexico, Mexico City: Universidad Iberoamericana.

Aguilar-Dubose, C. and García-Vedrenne, M. (2019). 'A City of Promenades', paper presented at the *9th Annual International Conference on Urban Studies and Planning*, Athens Institute for Education and Research, Athens, Greece, 3-6 June, 2019.

Bacon, E. (1976). N. *Design of Cities*. New York: Penguin Books, p. 185.

Boesiger, W. (ed.) (1972). *Le Corbusier*. London, England: Thames and Hudson Ltd, pp. 194-195.

Castillo, J. (2002) *La Metrópoli de lo Informal*. [online] Arquine. Available at: https://www.arquine.com/la-metropoli-de-lo-informal/ [Accessed 8 June 2020].

Fabos, J.G. (1995) Introduction and overview: the greenway movement, uses potentials of greenways. *Elsevier Landscape and Urban Planning Review,* (33), p. 9.

Forestier, J.C.N. (1997). *Grandes Villes et Systèmes de Parcs: France, Maroc, Argentine*. Paris: Institut Français d'Architecture, Éditions Norma.

García-Vedrenne, M. (2020). *Classroom exercise and exam for students in the Landscape Design and Workshop*, class handout, Universidad Iberoamericana, Mexico City.

Grupo "2C". (1979). 'Cerdá's Barcelona: The elements of Ensanche and construction of the block', *Lotus International, Quarterly Architectural Review*, (23), pp. 86-87.

Gruzinski, S. (2004). *La Ciudad de México: una Historia*. México: Fondo de Cultura Económica, p. 264.

Gutheim, F.A. and Lee, A.J. (2006). *Worthy of the Nation: Washington, D.C., from L'Enfant to the National Capital Planning Commission*. 2nd ed. Baltimore, Md.: Johns Hopkins University Press, pp. 138-139. Available at: https://books.google.com.mx/books?id=vz8xV7NVw-8C&printsec=frontcover&redir_esc=y#v=onepage&q&f=false [Accessed 11 June 2020]

Harnik, P. (2013) The Best Planned City in the West: Olmsted, Vaux, and the Buffalo Park System. *The Landscape Journal,* 35(1), p. 132.

Jordan, D. P. (1995). *Transforming Paris: the life and labors of Baron Haussmann*. New York: The Free Press, Simon & Schuster Inc., p. 155.

Kostoff, S. (1999). *The City Assembled: the Elements of Urban Form Through History*. London: Thames & Hudson Ltd, pp. 242-243.

Kostoff, S. (1999). *The City Shaped*. London: Thames and Hudson Ltd, pp. 177.

Leao Rego, R. (2014). *Brazilian garden cities and suburbs: accommodating urban modernity and foreign ideals*. [online] Academia. Available at:https://www.academia.edu/39716295/Brazilian_garden_cities_and_suburbs_accommodating_urban_modernity_and_foreign_ideals [Accessed 10 June 2020].

Loeffler, W. (2000). City parks: A legacy to cherish - The fledgling Pittsburgh Parks Conservancy works to preserve, restore urban breathing spaces. [online] Internet Archive. Available at: https://web.archive.org/web/20070928063010/http://www.phlf.org/news/mediaclips/2000/000116tr.html [Accessed 10 June 2020].

McChesney, R.D. (1987). 'Four Sources on Shah Abbas's Building of Isfahan'. *Muqarnas Online*, [online]. *5*(1), p. 104. Available at: *https://brill.com/view/journals/muqj/5/1/article-p103_10.xml [Accessed 9 June 2020].*

Morris, A.E.J. (1994). *History of Urban Form: Before the Industrial Revolutions*. 3rd ed. Harlow, England: Pearson Education Limited, pp. 228, 346-348.

Noelle Gras Gas, L. (2013) Ramón Torres y Héctor Velázquez: una colaboración ejemplar. In: C.R. Ettinger and L. Noelle, coord., *Los Arquitectos Mexicanos de la Modernidad: corrigiendo las omisiones y celebrando el compromiso*. 1st ed. México: Universidad Autónoma de San Luis Potosí, Universidad Michoacana de San Nicolás de Hidalgo, DOCOMOMO, p. 310.

Panerai, P., Castex, J. and Depaule, J.C. (2004). *Urban Forms: the death and life of the urban block*. Oxford: Architectural Press, pp. 98-102.

Ortiz Guitart, A. (2006). Regeneración urbana, espacio público y sentido de lugar. Un caso de estudio en la ciudad de México. *PROVINCIA,* [online] Vol., (15), p. 44. Available at https://www.redalyc.org/pdf/555/55501503.pdf [Accessed 10 June 2020).

Rybzcynski, W. (2010). *Makeshift Metropolis: Ideas about Cities*. [Kindle DX e-book] New York: Scribner, Simon & Schuster.

Smith, C. (2007). *The Plan of Chicago: Daniel Burnham and the Remaking of the American City*. Chicago: The University of Chicago Press.

Turner, T. (2005) *Garden History: Philosophy and Design 2000 B.C-2000 A.D.* New York: Spon Press, pp. 3, 252.

Welter, V.M. (2009). The 1925 Master Plan for Tel-Aviv by Patrick Geddes. *Israel Studies,* [online] Volume 14(3), pp. 94-119. Available at: https://www.jstor.org/stable/30245874?seq=1 [Accessed 10 June 2020].

MAP RESOURCES AND REFERENCES

Castera, I. (1794). *Ciudad de México*. [Map]. Available at: https://mapoteca.siap.gob.mx/index.php/coyb-df-m43-v2-0072/ [Accessed 17 June 2020].

De Santa Cruz, A. (1555). Ciudad de México y sus alrededores. [Map]. Available at: https://mapoteca.siap.gob.mx/index.php/coyb-df-m44-v11-0777/ [Accessed 17 June 2020].

Espinosa López, E. (1991). *Ciudad de México. Compendio cronológico de su desarrollo urbano.* México: Enrique Espinosa López, pp. 22, 80-81, 102-103, 116-117, 126-127, 140-141, 172-173, 212-213, 234-235, 262-263.

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